



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,184	03/11/2004	Mitsuo Nakagawa	14470.27US01	8623

7590 09/07/2006

Hamre, Schumann, Mueller & Larson P.C.  
P.O. Box 2902-0902  
Minneapolis, MN 55402

EXAMINER

ROCCA, JOSEPH M

ART UNIT PAPER NUMBER

3616

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/800,184

Applicant(s)

NAKAGAWA ET AL.

Examiner

Joseph Rocca

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 3 objected to because of the following informalities: Claims 1, 2, 4 and 5 refer to the claimed invention as a "frame body"; however, Claim 3, which is dependant upon claim 1, refers to the claimed invention as a "body frame." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (U.S. 4,662,467) in view of Roethlisberger (U.S. 4,057,120).

4. With respect to claim 1, Arai discloses a frame body for an off-road vehicle comprising: a frame (Col. 2, Lines 22-24); (Figure 3, Element 2), the frame being substantially rectangular when viewed from a side (Figure 3, Element 2), the frame comprising: a front member (Figure 3, Element 11b), a rear member (Figure 3, Element 12c), an upper main member (Figure 3, Element 11), and a lower main member (Figure 3, Element 12a), the upper and lower main members being coupled through the front and rear members (See, Figure 3); two upper arm supporting areas (Figure 3, Element 52a and 52b), the upper arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), two lower arm supporting

areas (Figure 3, Elements 53a and 53b), the lower arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), a first coupling member disposed between and coupling together the two upper arm supporting areas (Figure 3, Element 42a). Examiner notes that although members 11 and 11b and 12a and 12c respectively are integral it would have been obvious to have formed them from separate pieces, so as to facilitate assembly and manufacture, and it appears that how the frame is made depends more upon the choice of the manufacturer, and the convenience and availability of the machines and tools necessary to construct the frame, rather than on an inventive concept.

5. Arai does not disclose a second coupling member disposed between and coupling together the two upper arm supporting areas, the second coupling member being substantially V-shaped and extending above the first coupling member, the second coupling member being provided with a shock absorber supporting portion for supporting a shock absorber, the shock absorber supporting portion being positioned at or near an apex portion of the second coupling member. Regarding Claim 3, Arai also does not disclose the body frame according to claim 1, wherein a joint for connecting the upper main member to the frame body is provided in the area on or near the apex portion of the second coupling member.

6. However, Roethlisberger discloses a second coupling member disposed between and coupling together the two upper arm supporting areas (Figure 1, Element 18), the second coupling member being substantially V-shaped and extending above the first coupling member (Figure 1, Element 18), the second coupling member being

provided with a shock absorber supporting portion for supporting a shock absorber (Figure 1, Element 26) the shock absorber supporting portion being positioned at or near an apex portion of the second coupling member (Figure 1, Element 18). Further with respect to Claim 3, Roethlisberger discloses a joint for connecting the upper main member to the frame body is provided in the area on or near the apex portion of the second coupling member (Figure 3, Element 70).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Arai reference to include the suspension system taught in Roethlisberger, so as to create a suspension system utilizing a second coupling member having a shock absorber positioned at or near an apex portion of member. The motivation for doing so would have been to create a suspension system that is easily modifiable for a variety of vehicles meaning that it may be mounted as a unit on a variety of vehicle frame assemblies. See, Roethlisberger Col. 1, Lines 28-32 and Col. 2, Lines 53-56.

8. With respect to Claim 5, Arai discloses a frame body for an off-road vehicle comprising: a frame (Col. 2, Lines 22-24); (Figure 3, Element 2), the frame being substantially rectangular when viewed from a side (Figure 3, Element 2), the frame comprising: a front member (Figure 3, Element 11b), a rear member (Figure 3, Element 12c), an upper main member (Figure 3, Element 11), and a lower main member (Figure 3, Element 12a), the upper and lower main members being coupled through the front and rear members (See, Figure 3); two upper arm supporting areas (Figure 3, Element 52a and 52b), the upper arm supporting areas being configured to receive and support

Art Unit: 3616

a wheel so that the wheel is swingable (Col. 4, Lines 21-29), two lower arm supporting areas (Figure 3, Elements 53a and 53b), the lower arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), and a first coupling means for coupling together the two upper arm supporting areas (Figure 3, Element 42a). Examiner notes that although members 11 and 11b and 12a and 12c respectively are integral, it would have been obvious to have formed them from separate pieces so as to facilitate assembly and manufacture, and it appears that how the frame is made depends more upon the choice of the manufacturer, and the convenience and availability of the machines and tools necessary to construct the frame, rather than on an inventive concept.

9. Arai does not disclose a second coupling means for coupling together the two upper arm supporting areas, the second coupling means extending above the first coupling means, wherein the second coupling means is provided with a shock absorber supporting means for supporting a shock absorber, the shock absorber supporting means being positioned at or near an apex portion of the second coupling means.

10. However, Roethlisberger discloses a second coupling means for coupling together the two upper arm supporting areas (Figure 1, Element 18), the second coupling means extending above the first coupling means (Figure 1, Element 18), wherein the second coupling means is provided with a shock absorber supporting means for supporting a shock absorber (Figure 1, Element 26), the shock absorber supporting means being positioned at or near an apex portion of the second coupling means.

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Arai reference to include the suspension system taught in Roethlisberger, so as to include a second coupling means above the first coupling means, wherein the second coupling means further comprises a means for securing a shock absorber at or near its apex. The motivation for doing so would have been to create a suspension system that is easily modifiable for a variety of vehicles meaning that it may be mounted as a unit on a variety of vehicle frame assemblies.

See, Roethlisberger Col. 1, Lines 28-32 and Col. 2, Lines 53-56.

12. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (U.S. 4,662,467) in view of Cassese (U.S. 4,811,970).

13. With respect to claim 1, Arai discloses a frame body for an off-road vehicle comprising: a frame (Col. 2, Lines 22-24); (Figure 3, Element 2), the frame being substantially rectangular when viewed from a side (Figure 3, Element 2), the frame comprising: a front member (Figure 3, Element 11b), a rear member (Figure 3, Element 12c), an upper main member (Figure 3, Element 11), and a lower main member (Figure 3, Element 12a), the upper and lower main members being coupled through the front and rear members (See, Figure 3); two upper arm supporting areas (Figure 3, Element 52a and 52b), the upper arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), two lower arm supporting areas (Figure 3, Elements 53a and 53b), the lower arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), and a first coupling member disposed between and coupling together the two

Art Unit: 3616

upper arm supporting areas (Figure 3, Element 42a). Examiner notes that although members 11 and 11b and 12a and 12c respectively are integral it would have been obvious to have formed them from separate pieces so as to facilitate assembly and manufacture, and it appears that how the frame is made depends more upon the choice of the manufacturer, and the convenience and availability of the machines and tools necessary to construct the frame, rather than on an inventive concept.

14. Arai does not disclose a second coupling member disposed between and coupling together the two upper arm supporting areas; the second coupling member being substantially V-shaped and extending above the first coupling member, the second coupling member being provided with a shock absorber supporting portion for supporting a shock absorber, the shock absorber supporting portion being positioned at or near an apex portion of the second coupling member.

15. However, Cassese discloses a second coupling member disposed between and coupling together the two upper arm supporting areas (Figure 1, Element 24), the second coupling member being substantially V-shaped (Figures 1, 2, and 3, Element 24) and extending above the first coupling member (Figure 1, Element 24), the second coupling member being provided with a shock absorber supporting portion for supporting a shock absorber (Figure 1, Element 7) the shock absorber supporting portion being positioned at or near an apex portion of the second coupling member (Figure 1, Element 26).

16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Arai reference with that of Cassese, so as to



create a suspension system utilizing a second coupling member having a shock absorber positioned at or near an apex portion of member. The motivation for doing so would be to create a suspension system that is simultaneously has mechanical strength and rigidity sufficient to be able to resist effectively the high stresses which are transmitted to it by the wheels of the motor vehicle during driving thereof, and is further able to be manufactured using of very reduced dimensions and mass. See, Cassese Col. 1, Lines 34-40.

17. With respect to claim 5, Arai discloses a frame body for an off-road vehicle comprising: a frame (Col. 2, Lines 22-24); (Figure 3, Element 2), the frame being substantially rectangular when viewed from a side (Figure 3, Element 2), the frame comprising: a front member (Figure 3, Element 11b), a rear member (Figure 3, Element 12c), an upper main member (Figure 3, Element 11), and a lower main member (Figure 3, Element 12a), the upper and lower main members being coupled through the front and rear members (See, Figure 3); two upper arm supporting areas (Figure 3, Element 52a and 52b), the upper arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), two lower arm supporting areas (Figure 3, Elements 53a and 53b), the lower arm supporting areas being configured to receive and support a wheel so that the wheel is swingable (Col. 4, Lines 21-29), and a first coupling means for coupling together the two upper arm supporting areas (Figure 3, Element 42a). Examiner notes that although members 11 and 11b and 12a and 12c respectively are integral it would have been obvious to have formed them from separate pieces so as to facilitate assembly and manufacture, and it appears that

how the frame is made depends more upon the choice of the manufacturer, and the convenience and availability of the machines and tools necessary to construct the frame, rather than on an inventive concept.

18. Arai does not disclose a second coupling means for coupling together the two upper arm supporting areas, the second coupling means extending above the first coupling means, wherein the second coupling means is provided with a shock absorber supporting means for supporting a shock absorber, the shock absorber supporting means being positioned at or near an apex portion of the second coupling means.

19. However, Cassese discloses a second coupling means for coupling together the two upper arm supporting areas, (Figure 1, Element 24), the second coupling means extending above the first coupling means, (Figure 1, Element 24), wherein the second coupling means is provided with a shock absorber supporting means for supporting a shock absorber (Figure 1, Element 7), the shock absorber supporting means being positioned at or near an apex portion of the second coupling means (Figure 1, Element 26).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the suspension system taught by Arai, so as to include a second coupling means above the first coupling means, wherein the second coupling means further comprises a means for securing a shock absorber at or near its apex. The motivation for doing so would be to create a suspension system that is simultaneously has mechanical strength and rigidity sufficient to resist effectively the high stresses which are transmitted to it by the wheels of the motor vehicle during

driving thereof, and is further able to be manufactured using of very reduced dimensions and mass. See, Cassese Col. 1, Lines 34-40.

21. Claims 2 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Arai (U.S. 4,662,467) and Roethlisberger (U.S. 4,057,120) in view of Mikasa (U.S. 6,612,593). With respect to Claim 2, as discussed above, the combination of Arai and Roethlisberger teach the invention claimed in Claim 1. With respect to Claim 4, the combination of Arai and Roethlisberger further teaches the invention disclosed in Claim 3.

22. The combination of Arai and Roethlisberger does not teach the invention claimed in Claim 1, wherein the upper arm supporting areas, the lower arm supporting areas, the first and second coupling members, the shock absorber supporting portion, have been integrally formed by casting. Further regarding Claim 4, the combination of Arai and Roethlisberger does not teach the frame body according to claim 3, wherein the upper arm supporting areas, the lower arm supporting areas, the first and second coupling members, the shock absorber supporting portion and the joint have been integrally formed by casting.

23. However, Mikasa discloses a suspension structure formed by casting. (Col. 2, Lines 50-55).

24. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of the Arai and Roethlisberger references with Mikasa, so as to create the suspension system of claims 2 and 4, formed by casting. The motivation for doing so would be to create a suspension system

Art Unit: 3616

that is less expensive to manufacture and better adaptable for the requirements of mass production. Further, it must be noted that the use of casting is well known in the art of suspension manufacturing, mere use of a common and well known forming method in an otherwise unpatentable device by the applicant of matter is prima facie obvious.

25. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Arai (U.S. 4,662,467) and Cassese (U.S. 4,811,970) in view of Mikasa (U.S. 6,612,593).

26. With respect to Claim 2, as discussed above the combination of Arai and Cassese teach the invention claimed in Claim 1.

27. The combination of Arai and Cassese do not teach the invention claimed in Claim 1, wherein the upper arm supporting areas, the lower arm supporting areas, the first and second coupling members, and the shock absorber supporting portion have been integrally formed by casting.

28. However, Mikasa discloses a suspension structure formed by casting. (Col. 2, Lines 50-55).

29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of the Arai and Roethlisberger references with Mikasa, so as to create the suspension system of Claim 2, formed by casting. The motivation for doing so would be to create a suspension system that is less expensive to manufacture and better adaptable for the requirements of mass production. Further, it must be noted that the use of casting is well known in the art of

suspension manufacturing, mere use of a common and well known forming method in an otherwise unpatentable device by the applicant of matter is prima facie obvious.

***Examiner's Note:***

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Zaich (U.S. 6,733,021) discloses a suspension system for a vehicle comprising both a first coupling member and a second coupling member, where the second coupling member further comprises a shock absorber supporting member.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Rocca whose telephone number is 571-272-5191. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMR

 8730106  
PAUL N. DICKSON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600